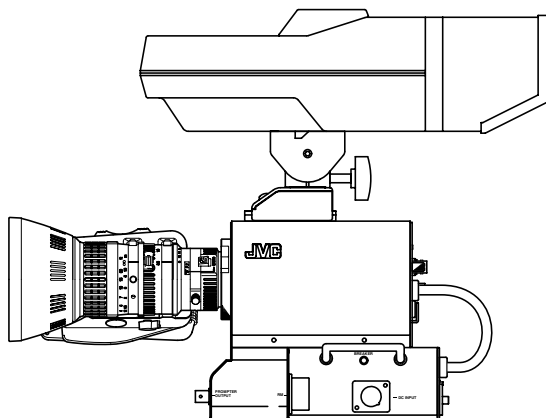




SERVICE MANUAL

STUDIO KIT/STUDIO SDI KIT

KA-F5602U/KA-F5603U



本機は輸出モデルですが、日本国内でも販売されています。

Although this unit is an export model, it is sold also in Japan.

このサービスマニュアルには、英語と日本語が併記されているところがあります。

English and Japanese are written together somewhere in this service manual.

TABLE OF CONTENTS

Section	Title	Page	Section	Title	Page
Important Safety Precautions					
INSTRUCTIONS					
SECTION 1 SERVICE CAUTIONS AND DISASSEMBLY					
1.1	DIFFERENCES IN THE MAJOR PARTS BETWEEN KA-F5602U AND KA-F5603U.	1-1			
1.2	CONSTRUCTION OF THE MAIN BOARD	1-1			
1.3	HOW TO USE THE SONY CABLE	1-2			
SECTION 2 CHARTS AND DIAGRAMS					
2.1	MAIN SCHEMATIC DIAGRAM	2-2			
2.2	MAIN CIRCUIT BOARD	2-3			
2.3	REAR SCHEMATIC DIAGRAM	2-4			
2.4	REAR CIRCUIT BOARD	2-5			
2.5	26PIN SCHEMATIC DIAGRAM	2-6			
2.6	BNC SCHEMATIC DIAGRAM	2-6			
2.7	26PIN CIRCUIT BOARD	2-7			
2.8	BNC CIRCUIT BOARD	2-7			
2.9	SDI SCHEMATIC DIAGRAM	2-8			
2.10	SDI CIRCUIT BOARD	2-9			
2.11	IC BLOCK DIAGRAMS	2-10			
SECTION 3 EXPLODED VIEWS AND PARTS LIST					
3.1	KA-F5602U/KA-F5603U ASSEMBLY M1	3-1			
SECTION 4 ELECTRICAL PARTS LIST					
4.1	MAIN BOARD ASSEMBLY PARTS LIST 01	4-2			
4.2	REAR BOARD ASSEMBLY PARTS LIST 02	4-3			
4.3	26P BOARD ASSEMBLY PARTS LIST 03	4-3			
4.4	BNC BOARD ASSEMBLY PARTS LIST 04	4-3			
4.5	SDIST BOARD ASSEMBLY PARTS LIST 05	4-4			
SECTION 5 PACKING					
5.1	PACKING ASSEMBLY M2	5-1			

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the $\triangle$ symbol and shaded (■) parts are critical for safety.
Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

5. Use specified insulating materials for hazardous live parts.
Note especially:
1) Insulation Tape 3) Spacers 5) Barrier
2) PVC tubing 4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

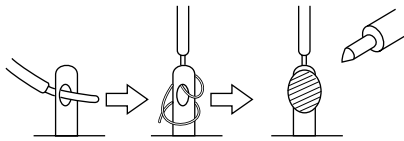


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

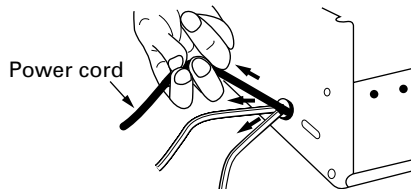


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector

In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

1) **Connector part number** : E03830-001

2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.

3) **Replacement procedure**

(1) Remove the old connector by cutting the wires at a point close to the connector.

Important : Do not reuse a connector (discard it).

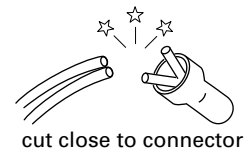


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

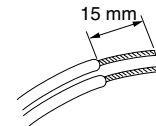


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

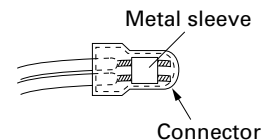


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.



Fig.6

(5) Check the four points noted in Fig.7.

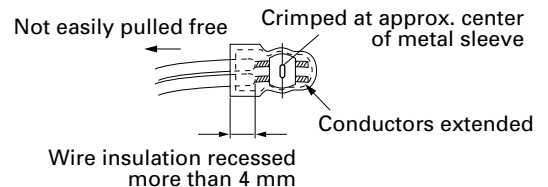


Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

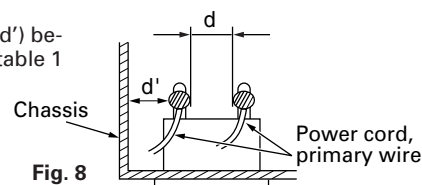
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

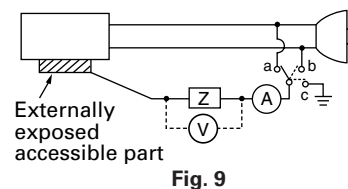


4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

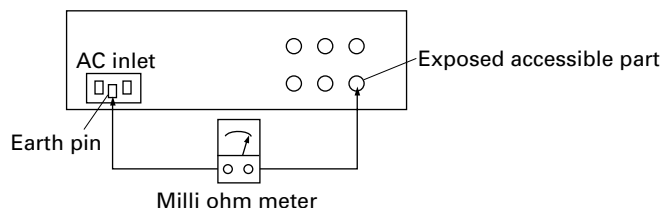


5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.



Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	$Z \leq 0.1 \text{ ohm}$
Europe & Australia	$Z \leq 0.5 \text{ ohm}$

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$R \geq 1 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3 \text{ mm}$
100 to 240 V			AC 1.5 kV 1 minute	$d, d' \geq 4 \text{ mm}$
110 to 130 V	USA & Canada	—	AC 900 V 1 minute	$d, d' \geq 3.2 \text{ mm}$
110 to 130 V	Europe & Australia	$R \geq 10 \text{ M}\Omega/500 \text{ V DC}$	AC 3 kV 1 minute (Class II)	$d \geq 4 \text{ mm}$
200 to 240 V			AC 1.5 kV 1 minute (Class I)	$d' \geq 8 \text{ mm (Power cord)}$ $d' \geq 6 \text{ mm (Primary wire)}$

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	$1 \text{ k}\Omega$	$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada	$0.15 \mu\text{F}$ and $1.5 \text{ k}\Omega$	$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	Europe & Australia	$2 \text{ k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
220 to 240 V		$50 \text{ k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1

SERVICE CAUTIONS AND DISASSEMBLY

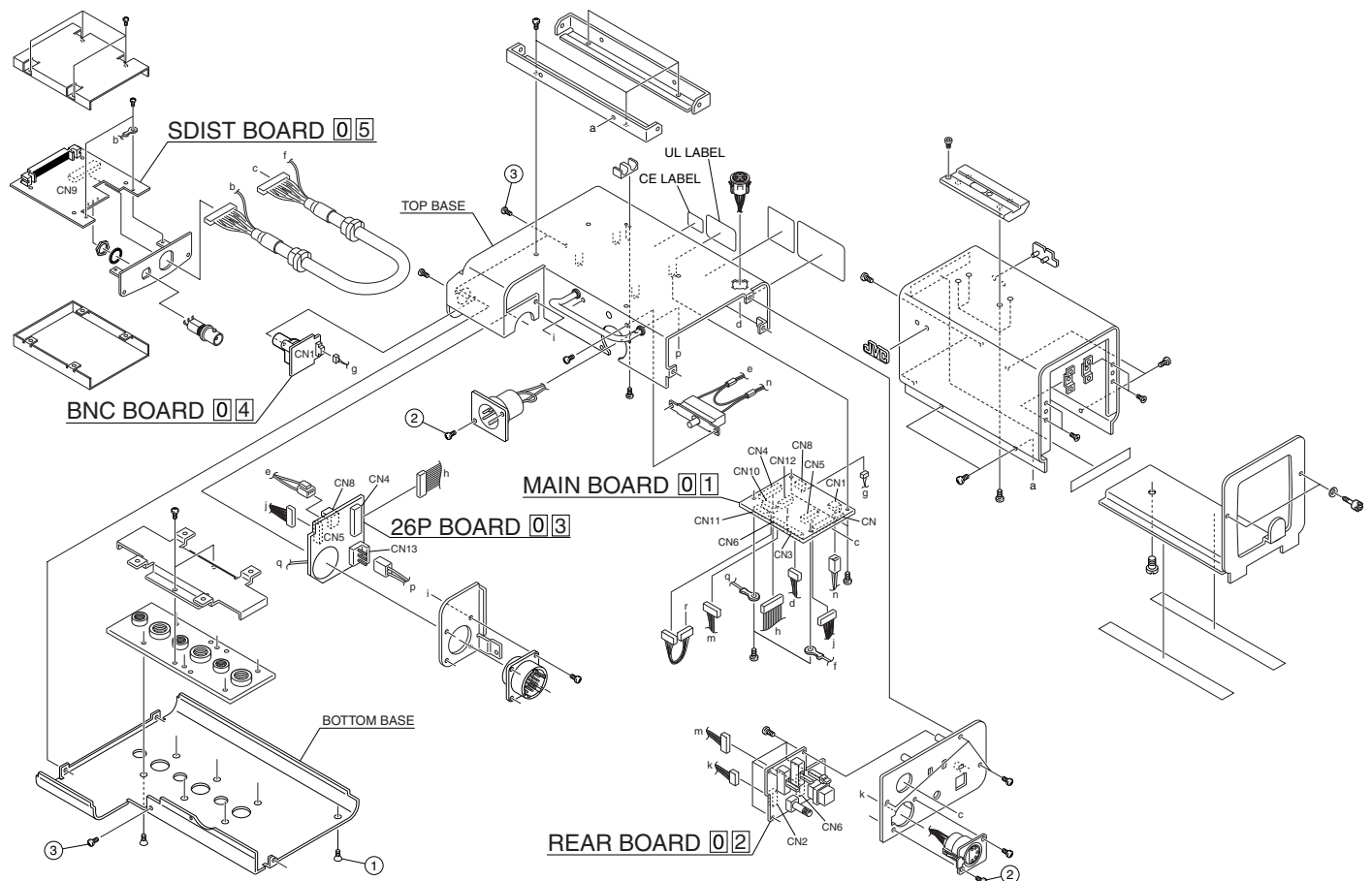
1.1 DIFFERENCES IN THE MAJOR PARTS BETWEEN KA-F5602U AND KA-F5603U.

KA-F5602U と KA-F5603U の主要部品相違点

Part Name	KA-F5602U	KA-F5603U	Description
SDI IC	—	CLC021AGVZ-3.3	IC408
BNC CONNECTOR	—	QNZ0481-001	JK401

1.2 CONSTRUCTION OF THE MAIN BOARD

主要基板の配置図



1) How to remove the BOTTOM BASE

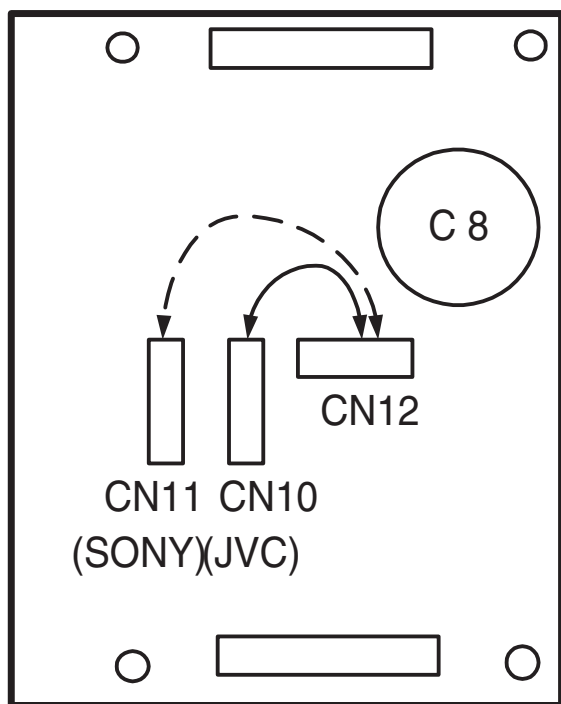
BOTTOM BASEの取外し方法

- (1) Remove the screw ① on the BOTTOM BASE.
スクリュー ① 1本を外します。
- (2) Remove the two screws ②, which fix the DC INPUT and the INTERCOM TERMINAL on the BOTTOM BASE.
DC INPUTとINTERCOM TERMINALの固定スクリュー ② 2本を外します。
- (3) Remove the three screws ③ on the BOTTOM BASE.
スクリュー ③ 3本を外します。

1.3 HOW TO USE THE SONY CABLE

SONY ケーブルの使用方法

- 1) Remove the six screws which fix the BOTTOM BASE.
BOTTOM BASEを固定しているスクリュー6本を外します。
- 2) The cable is connected to the connectors, CN12 and CN10 on the MAIN board.
Disconnect the cable from the CN10.
MAIN基板のCN12とCN10に接続されているCN10側のケーブルを外します。
- 3) Connect the cables to the connectors, CN12 and CN11.
CN12とCN11にケーブルを接続します。
Factory setting (JVC cable): CN12-CN10



MAIN BOARD ASSEMBLY

SECTION 2

CHARTS AND DIAGRAMS

■ SCHEMATIC DIAGRAM NOTES

- **Schematic safety precaution**
△ Parts are safety related parts.
When replacing them, be sure to use the specified parts.
- **Waveform measurements**
Waveform: Gray scale illuminated at more than 4000 lux at 3200K lighting.
- **Unit of value**
Unless otherwise specified
 - 1) Resistance is in (1/6 W)
 - 2) Capacitance is in μF
 - 3) Inductance is in μH

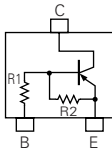
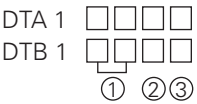
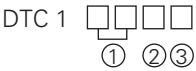
- ① Two digits show resistance of R1 in abbreviation.
43 : 4.7 k
14 : 10 k
24 : 22 k
44 : 47 k
- ② Roman letter show the resistive ratio between R1 and R2 in abbreviation.
E : $R2/R1 = 1/1$
Y : $R2/R1 = 5/1$
W : $R2/R1 = 2/1$
X : $R2/R1 = 1/2$
T : R2 is opened.
- ③ Symbol the shape of resistor in abbreviation.

■ REPLACING SURFACE MOUNT “CHIP” COMPONENTS

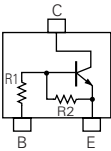
- Some resistors, shorting jumpers (0 resistance), ceramic capacitors, transistors, and diodes are chip parts. These chip parts cannot be reused after they are once removed.
- Chip resistors used in some circuits are of high precision type having little error in resistance.
To demonstrate the full capacity of this set, place an order for proper parts referring to the diagrams and parts lists in the section 5.
- Soldering cautions:
 - 1) Do not apply heat for more than 3 seconds.
 - 2) Avoid using a rubbing stroke when soldering.
 - 3) Discard removed chips; do not reuse them.
 - 4) Supplementary cementing is not required.
 - 5) Use care not to scratch or otherwise damage the chips.

■ CHIP PARTS PIN ARRANGEMENT

[1] Digital transistors

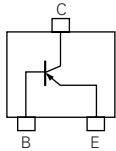
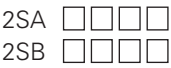


(Top view)

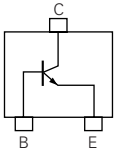
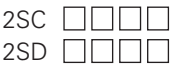


(Top view)

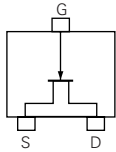
[2] Chip transistors and chip F.E.T.s



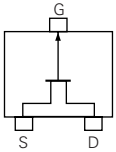
(Top view)



(Top view)

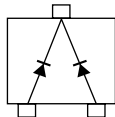


(Top view)

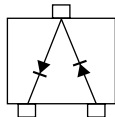


(Top view)

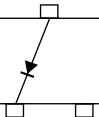
[3] Chip diodes



(Top view)

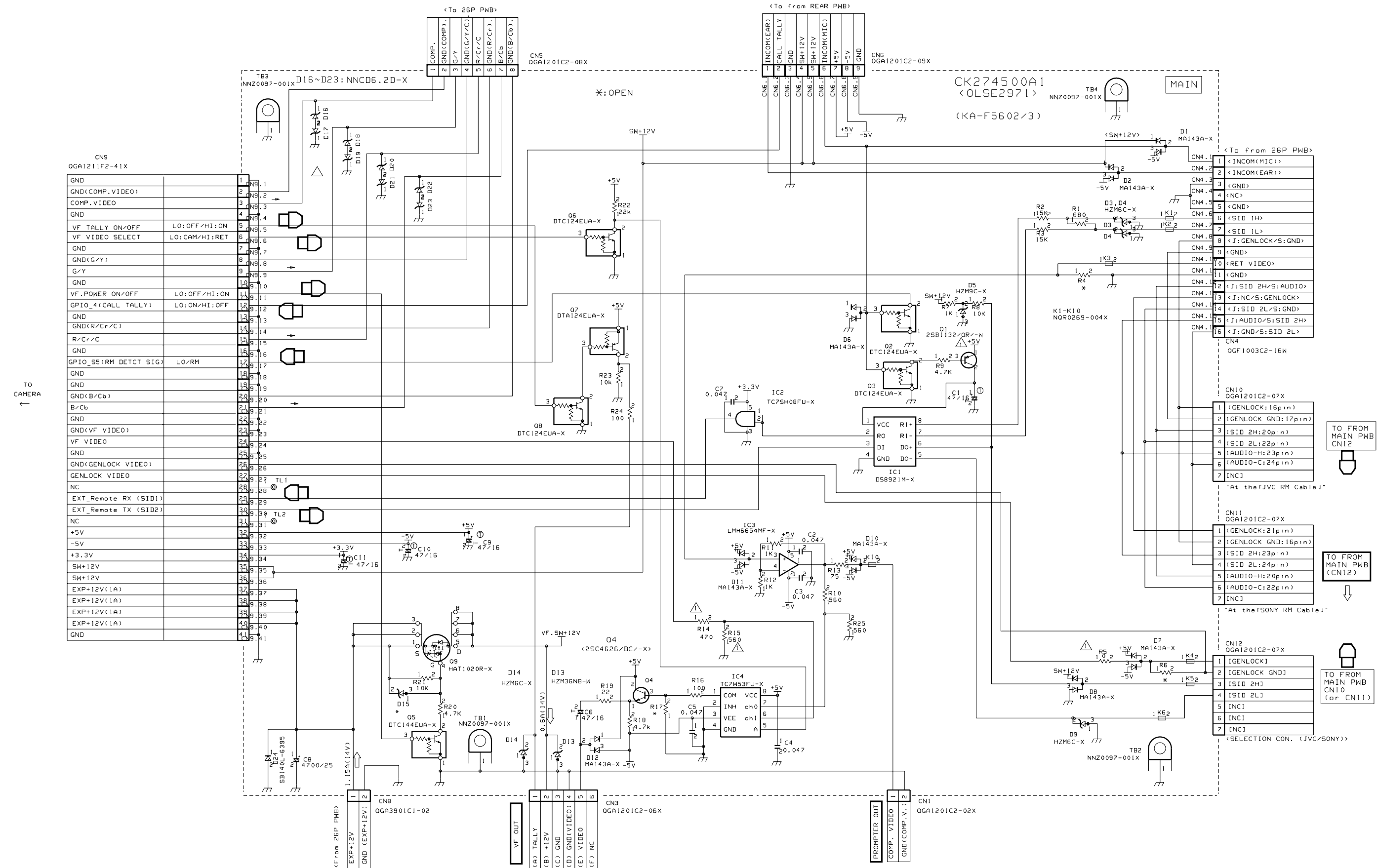


(Top view)



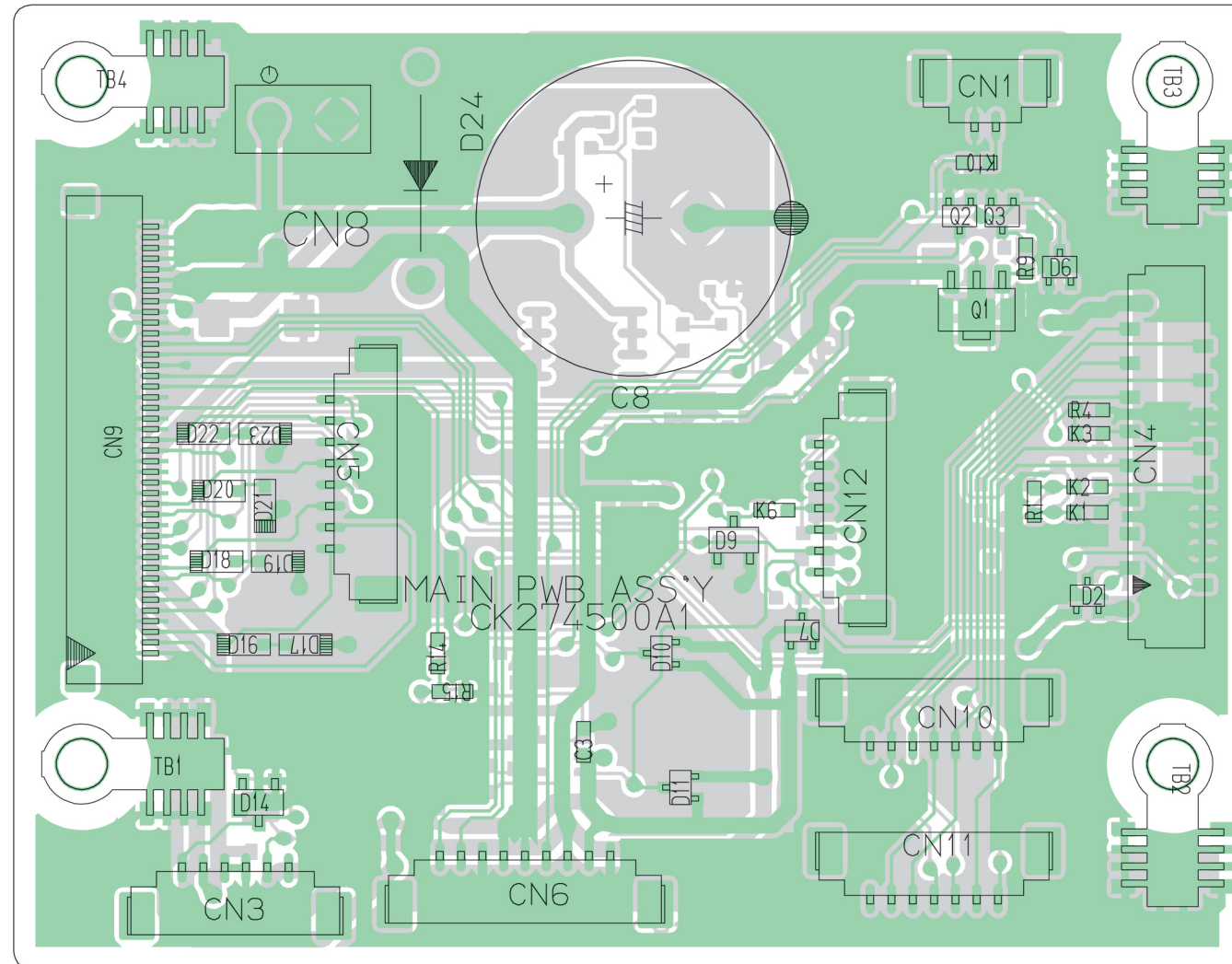
(Top view)

2.1 MAIN SCHEMATIC DIAGRAM

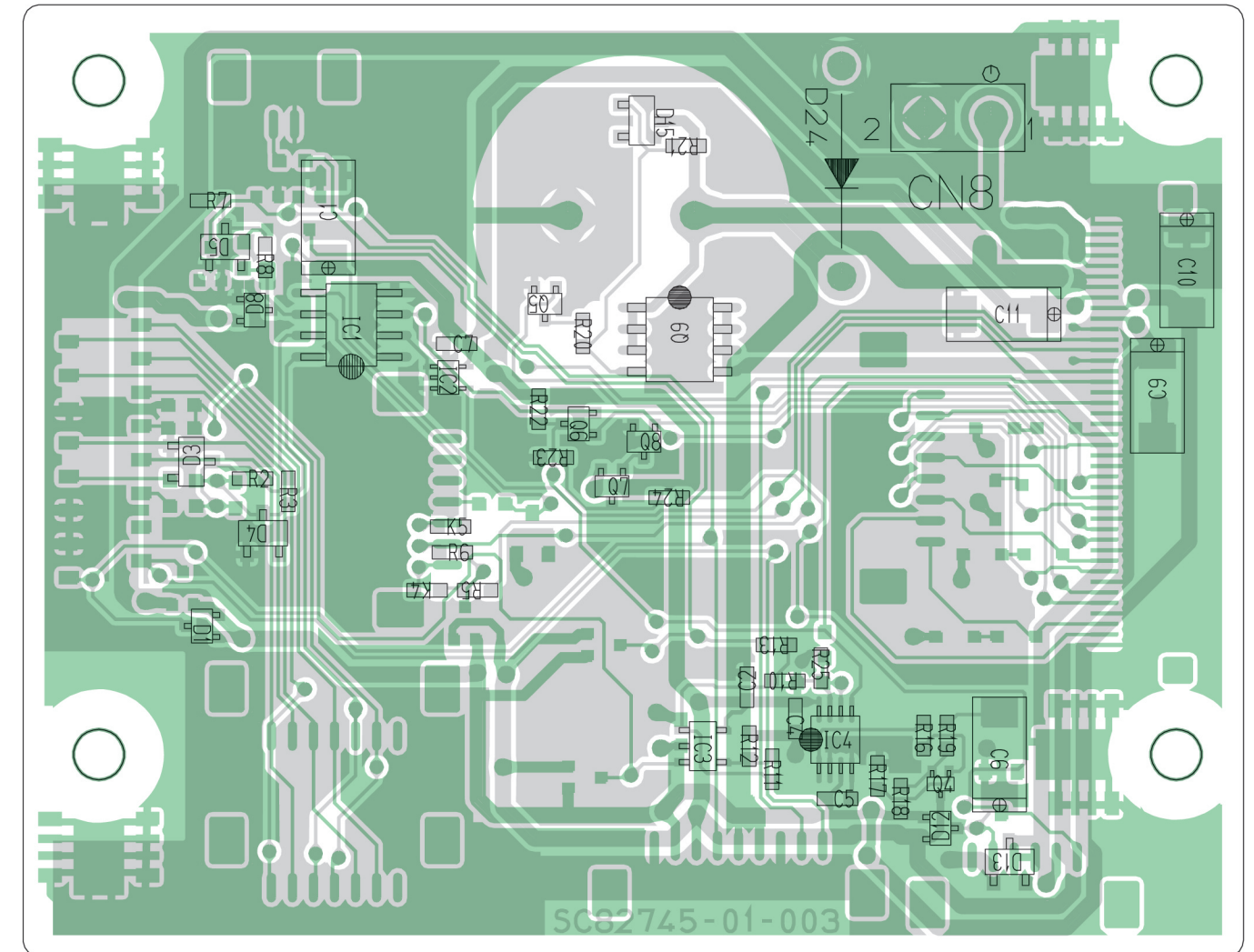


2.2 MAIN CIRCUIT BOARD

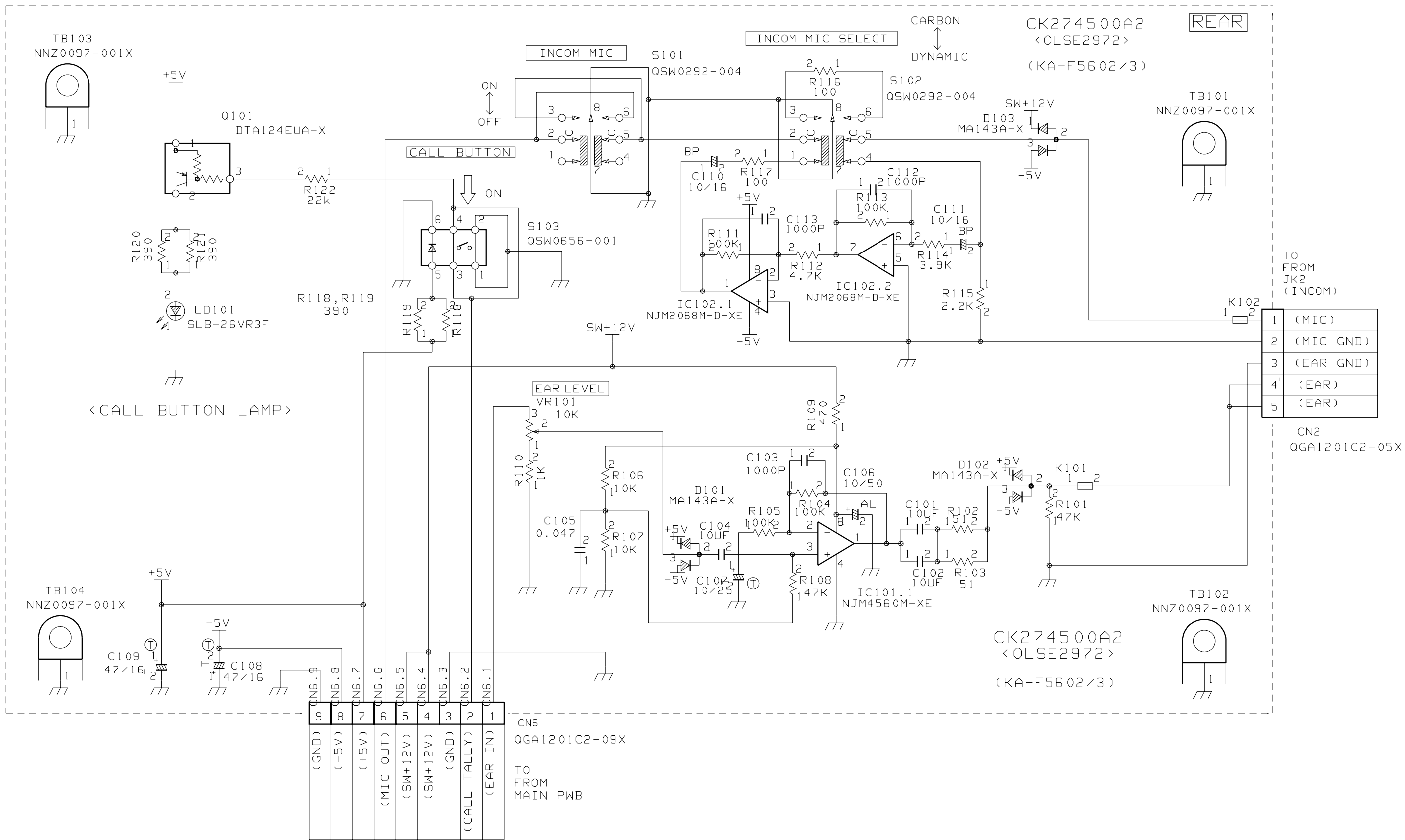
— SIDE A —



— SIDE B —

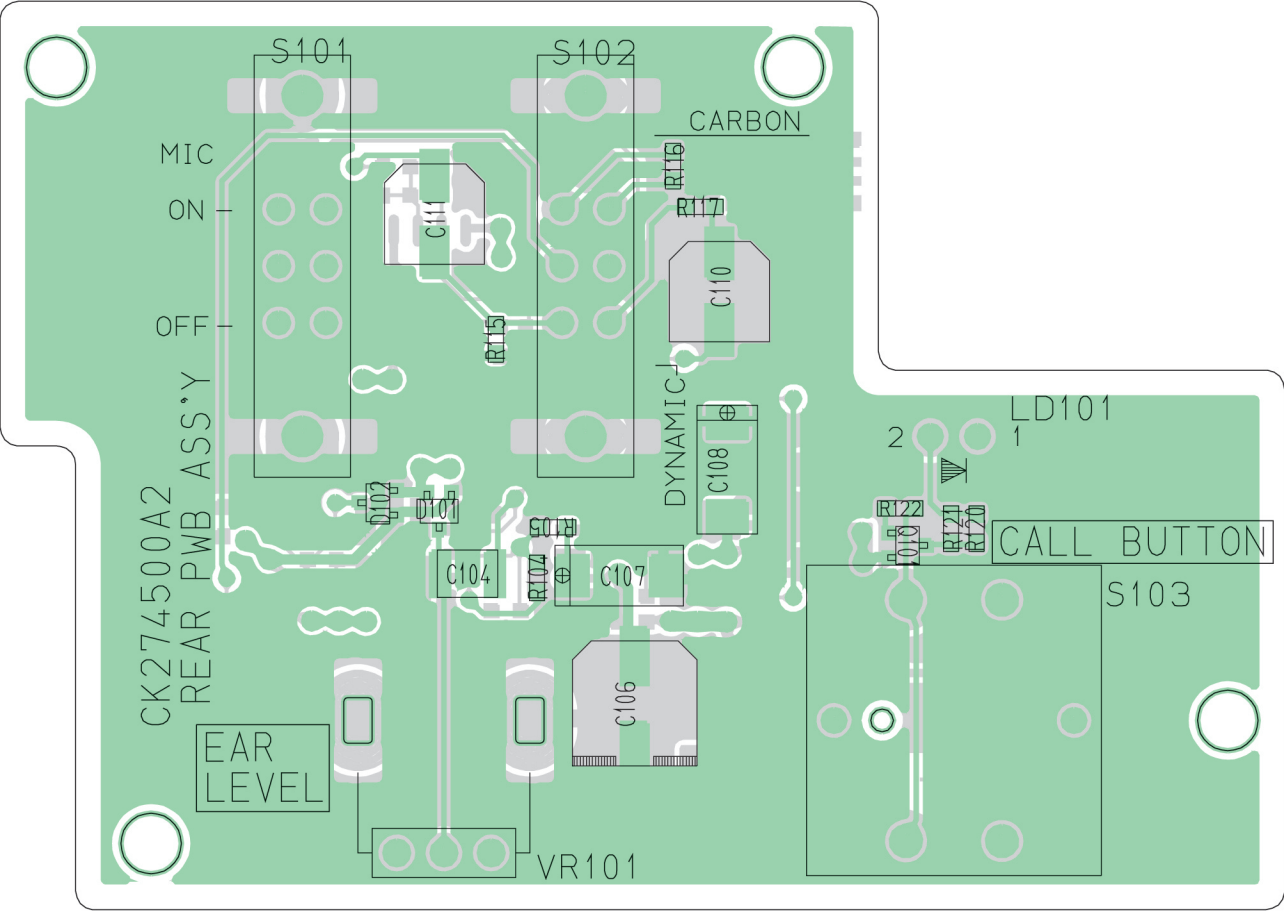


2.3 REAR SCHEMATIC DIAGRAM

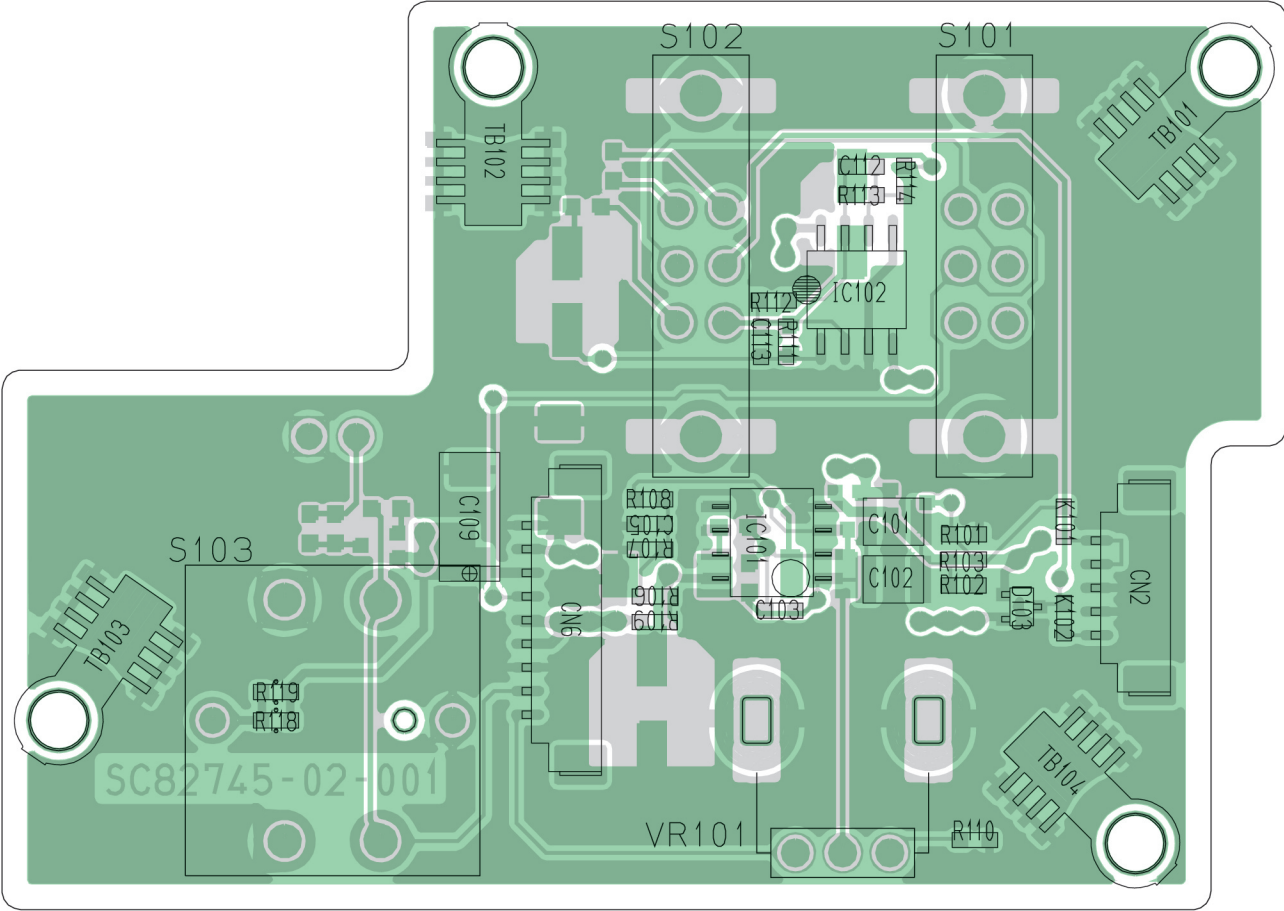


2.4 REAR CIRCUIT BOARD

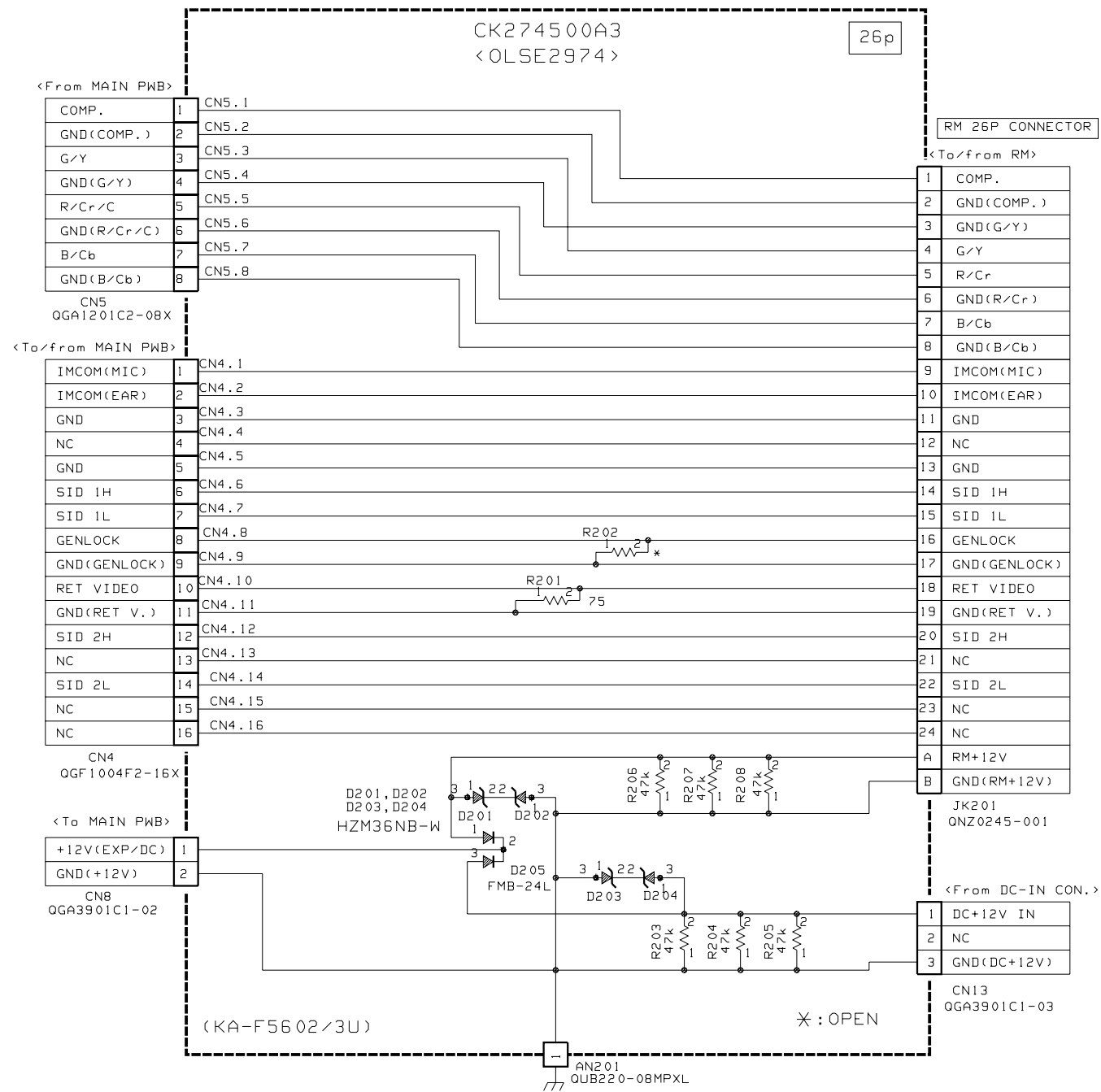
— SIDE A —



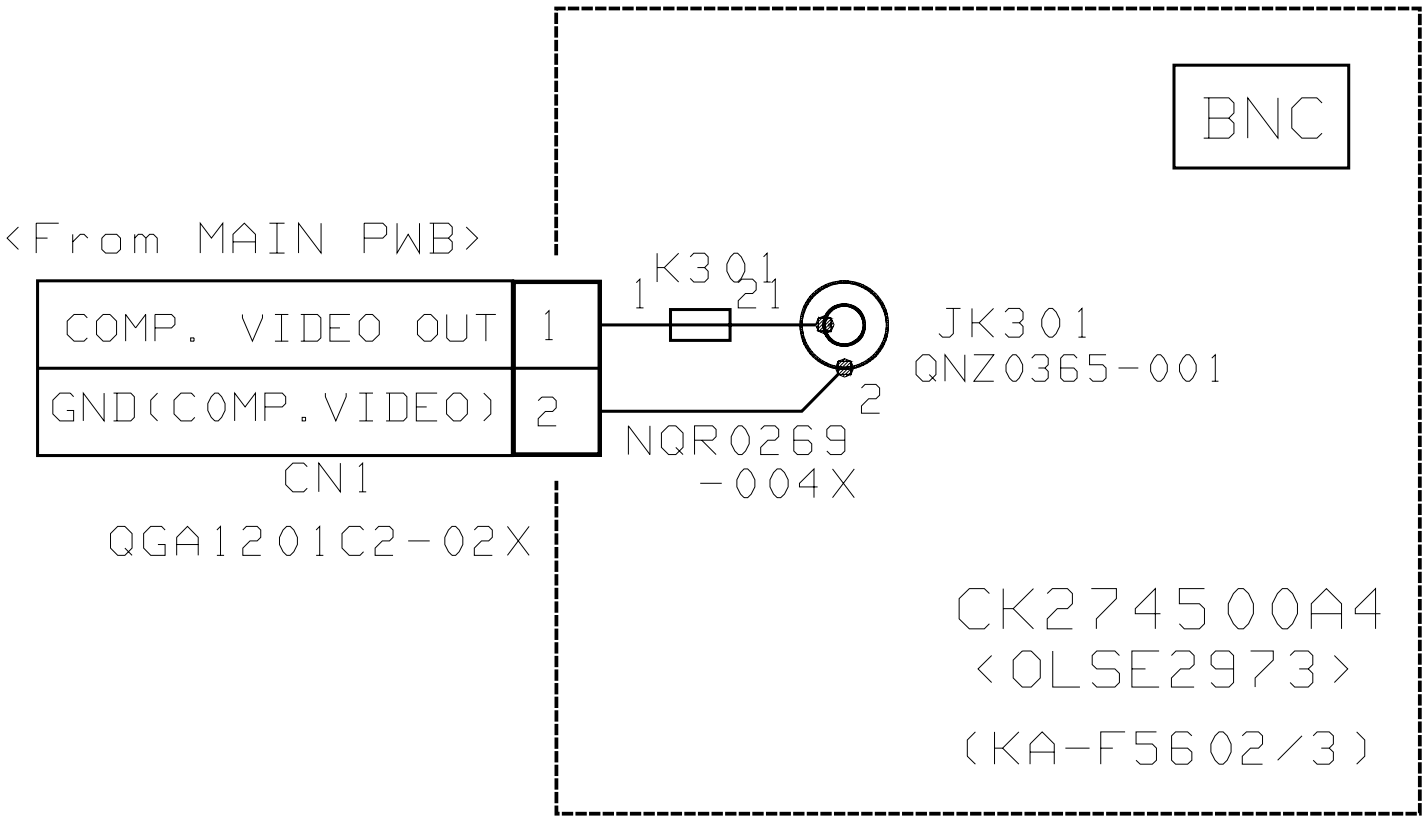
— SIDE B —



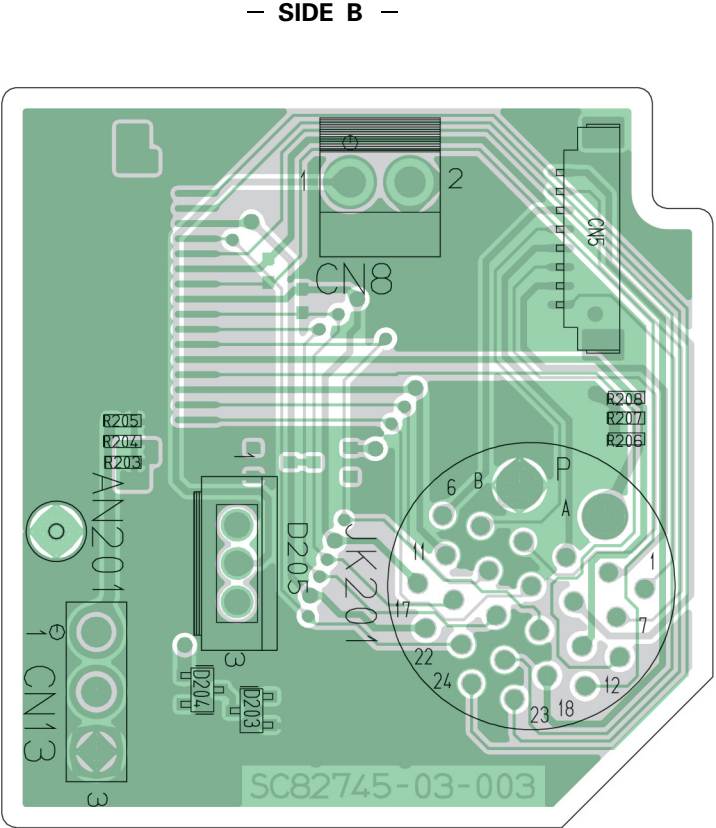
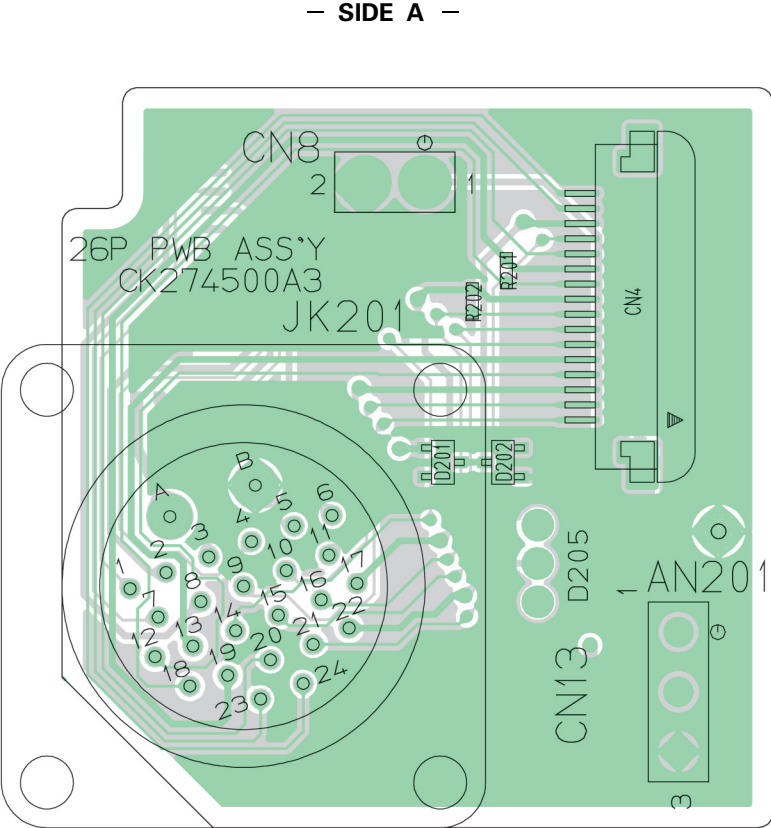
2.5 26PIN SCHEMATIC DIAGRAM



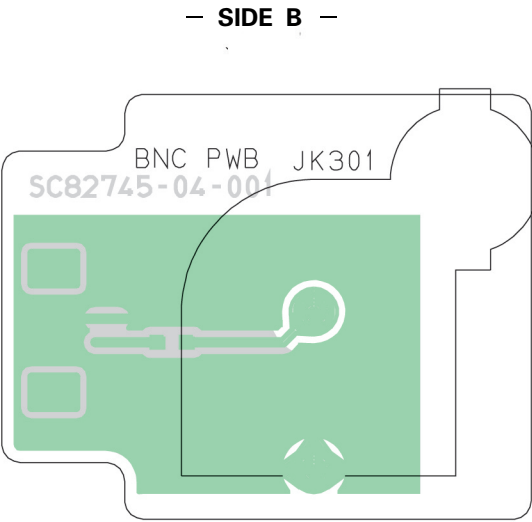
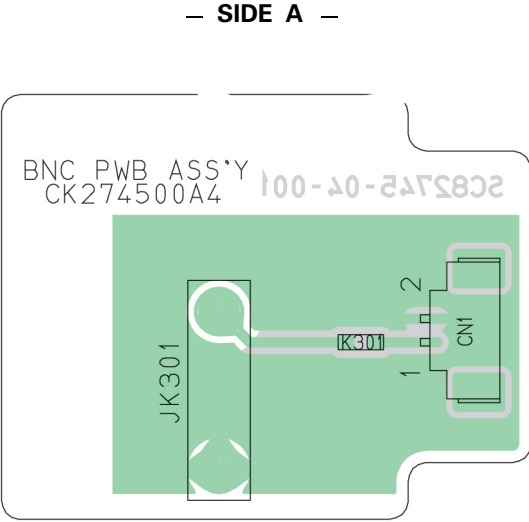
2.6 BNC SCHEMATIC DIAGRAM



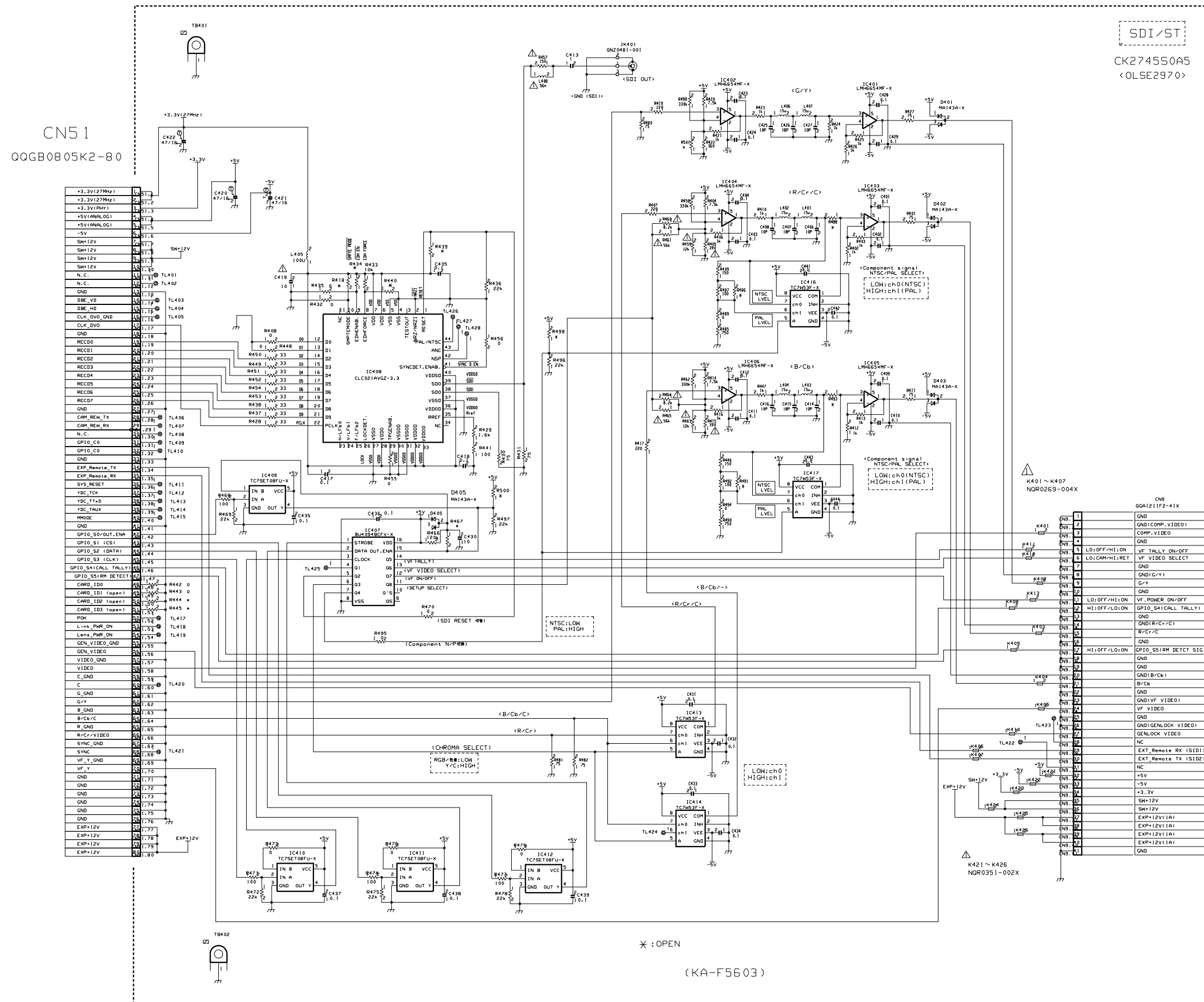
2.7 26PIN CIRCUIT BOARD



2.8 BNC CIRCUIT BOARD

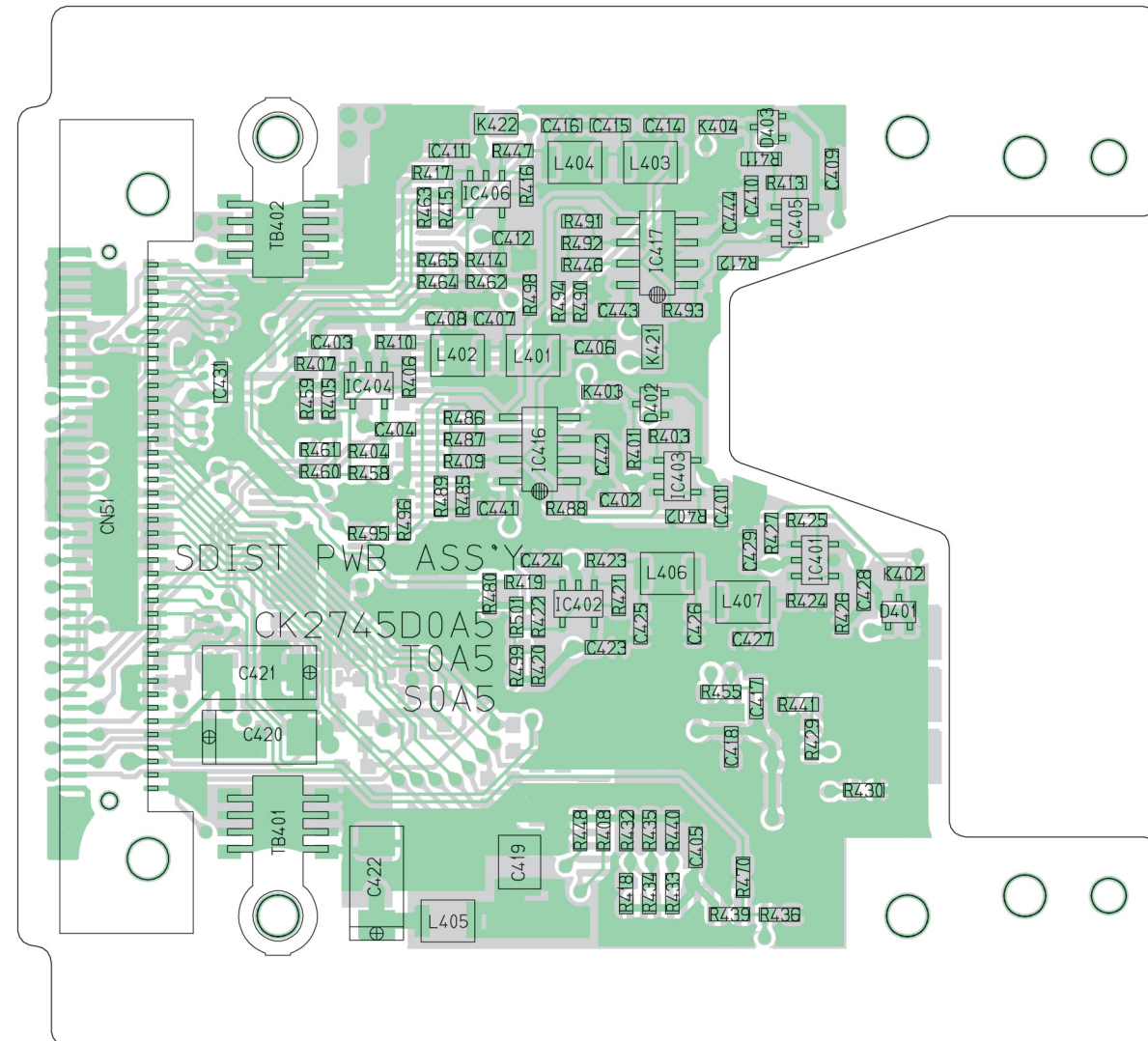


2.9 SDI SCHEMATIC DIAGRAM

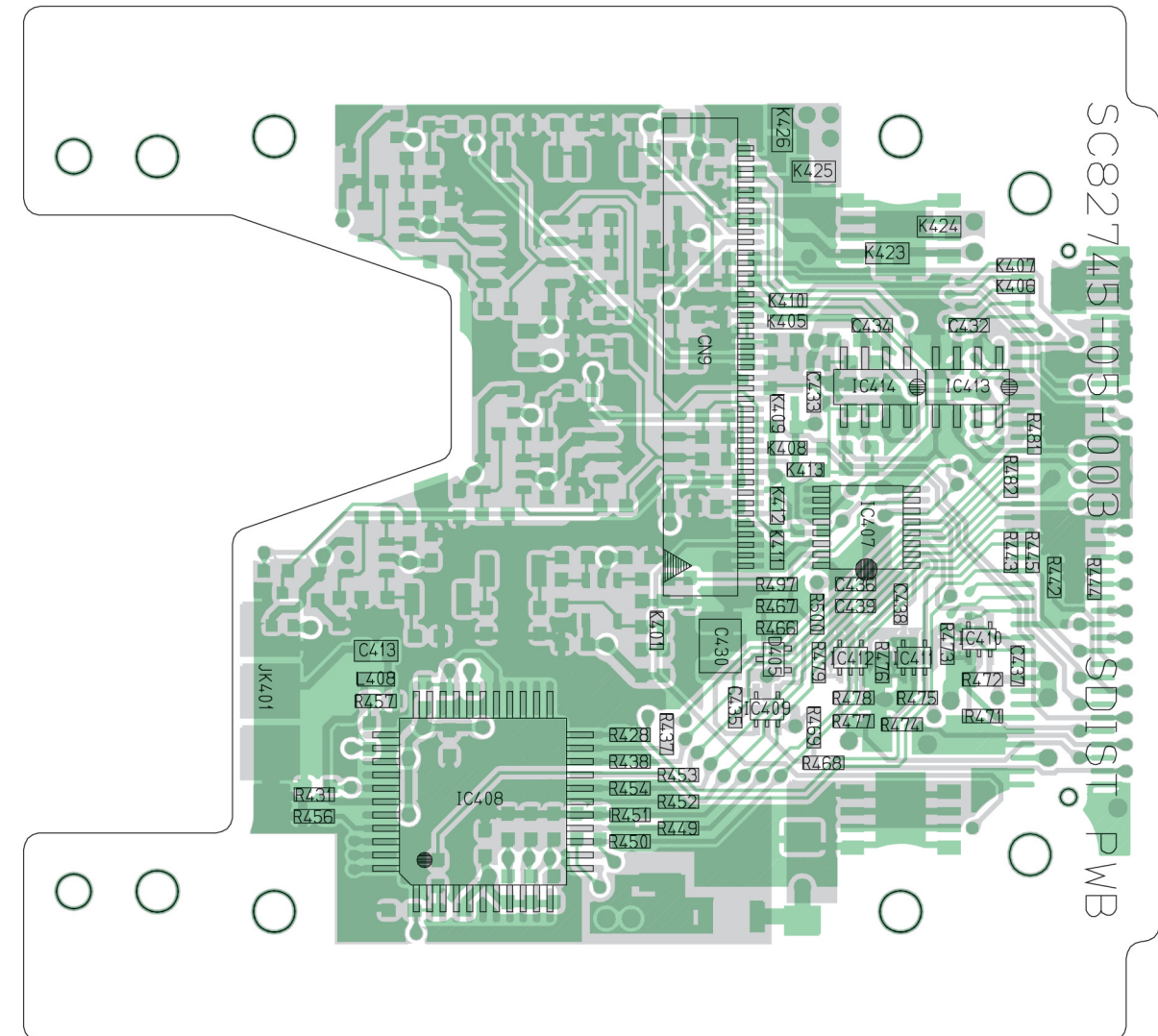


2.10 SDI CIRCUIT BOARD

— SIDE A —

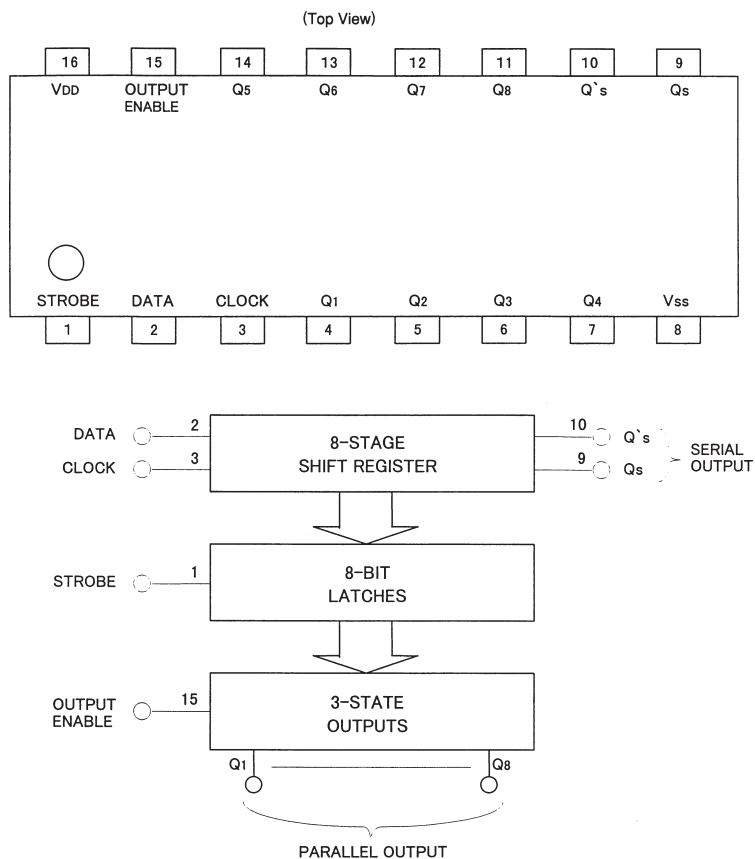


— SIDE B —

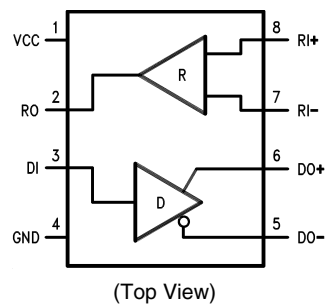


2.11 IC BLOCK DIAGRAMS

■ BU4094BCFV-X [ROHM]
(8-Stage Shift/Store Register)



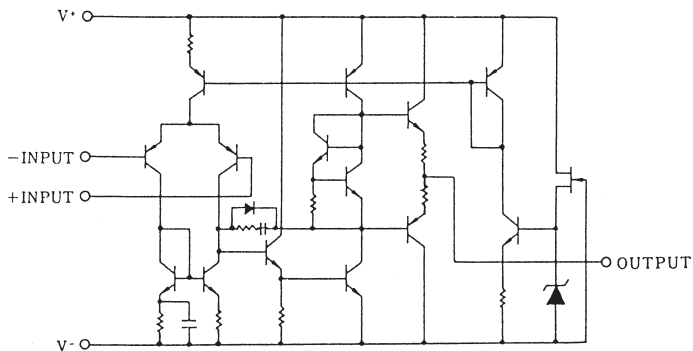
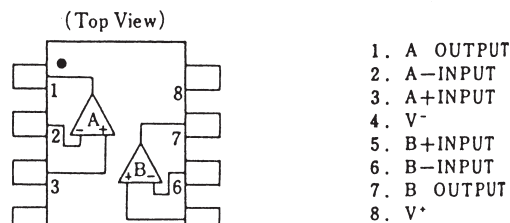
■ DS8921M-X [NATIONAL SEMICONDUCTOR]
(Differential Line Driver and Receiver Pair)



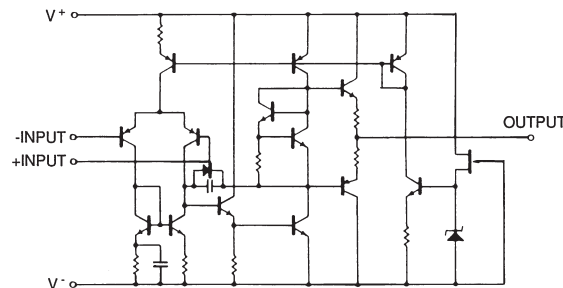
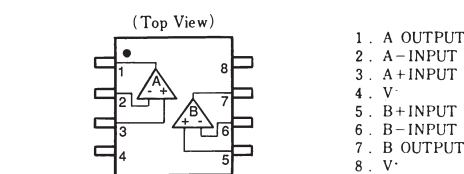
Truth Table

Receiver		Driver		
Input	V _{OUT}	Input	V _{OUT}	V̄ _{OUT}
V _{ID} ≥ V _{TH} (MAX)	1	1	1	0
V _{ID} ≤ V _{TH} (MIN)	0	0	0	1
Open	1			

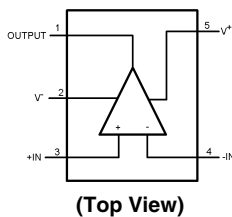
■ NJM2068M-D-XE [JRC]
(Dual Low-Noise Op.Amp.)



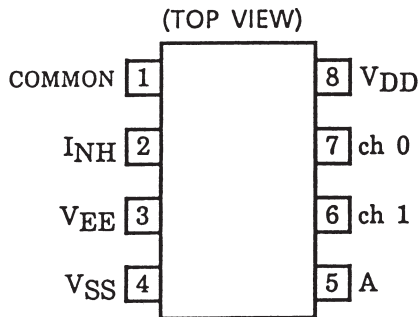
■ NJM4560M-XE [JRC]
(Dual Op.Amp.)



■ LMH6654MF-X [NATIONAL SEMICONDUCTOR]
(250MHz Low Noise Amplifiers)



■ TC4W53FU-X [TOSHIBA]
(2-Channel Multiplexer)



Truth table

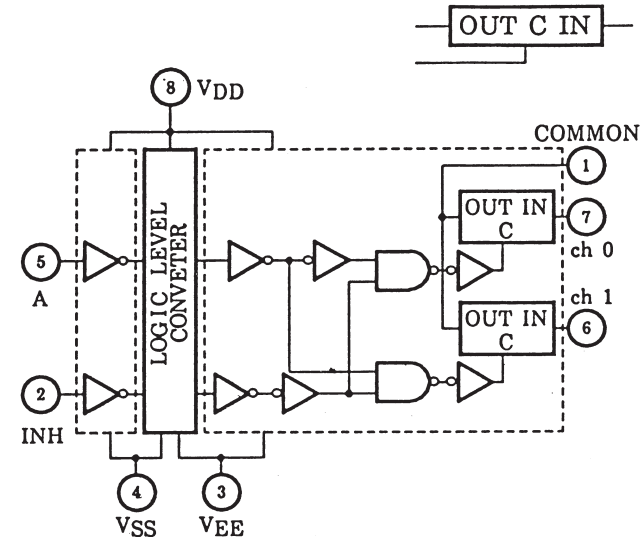
CONTROL C	IMPEDANCE BETWEEN IN-OUT ※
H	0.5~5×10 ² Ω
L	>10 ⁹ Ω

※ Don't Care

Truth table

CONTROL INPUT		ON CHANNEL
INH	A	
L	L	ch 0
L	H	ch 1
H	※	NONE

※ Don't Care





■ TC7SH08FU-X [TOSHIBA]
(Refer to TC7SET08FU-X.)

■ TC7SET08FU-X [TOSHIBA]
(2 Input Single AND Gate)



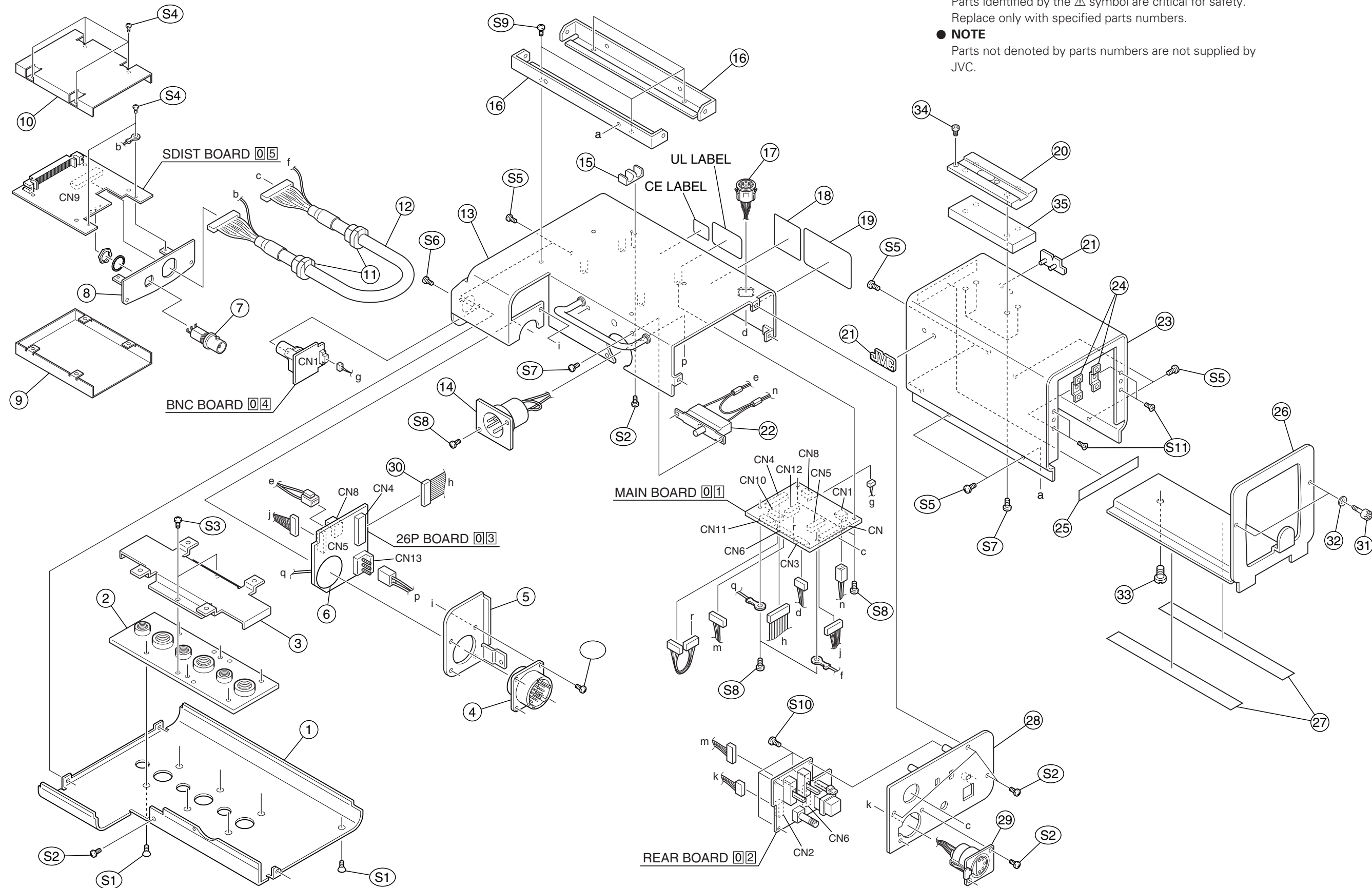
x : Don't care

LOGIC DIAGRAM



SECTION 3
EXPLODED VIEWS AND PARTS LIST

3.1 KA-F5602U/KA-F5603U ASSEMBLY M 1



● **SAFETY PRECATION**
Parts identified by the ⚠ symbol are critical for safety.
Replace only with specified parts numbers.

● **NOTE**
Parts not denoted by parts numbers are not supplied by JVC.

● ASSEMBLY PARTS LIST M 1

M 1 M M

Symbol No.	Part No.	Part Name	Description
1	LW10097-001B	BOTTOM BASE	26PIN CON. FOR 26PIN
2	LW30469-001B	INSTALL BASE	
3	LW30470-002A	BRACKET	
4	QNZ0245-001	CONNECTOR	
5	LW30468-001B	SIDE BRACKET	
6	SC45279-001	SHEET	FOR KA-F5603U
7	QNZ0481-001	BNC CONNECTOR	
8	LW30472-001C	PANEL ASSY	
9	LW30473-001B	SHIELD CASE A	
10	LW30474-001A	SHIELD CASE	
△	11 QZW0043-001	STRAIN RELIEF	
12	WJW0017-001B	E-TWISTED ASSY	
13	LW10096-002A	TOP BASE	
14	QNZ0217-001	PLUG	
15	SC42550H-011	C.HOLDER	
16	LW30467-001B	GUIDE	
17	QNZ0711-001	CONNECTOR	
18	SC45622-001	CAUTION LABEL	
19	SC46269-001	RATING LABEL	
20	SC46628-001	SHOE	
△	21 LW40363-001C	MARK(JVC)	
22	QMH0019-001	CIRCUIT BREAKER	
23	LW20128-001A	CASE	
24	LW40627-001A	BRACKET	
25	LW40695-001A	GASKET	
26	LW10095-001B	CAMERA BASE	
27	LW40658-001A	PROTECT SHEET	
28	LW20129-001B	REAR PANEL ASSY	
29	QNZ0252-001	CONNECTOR	
30	SCV2337-1612BD	FFC	
31	SS412566-001	SPECIAL SCREW	x2 FOR SHOE
32	SS48507-001	WASHER	
33	SC46350-001	SCREW	
34	QYYSPP3005M	BOLT	
35	LW40734-001A	SPACER	
S1	QYSSSP2604M	SCREW	M2.6x4
S2	QYSDSF2005M	SCREW	M2x5
S3	QYSDSP2604N	SCREW	M2.6x4
S4	QYSDSP2004N	SCREW	M2x4
S5	QYSDSP2605M	SCREW	M2.6x5
S6	QYSDSF3008M	SCREW	M3x8
S7	QYSDSP3016M	SCREW	M3x16
S8	QYSPSP2606N	SCREW	M2.6x6
S9	QYSDSP2604N	SCREW	M2.6x4
S10	QYSDSP3005N	SCREW	M3x5
S11	QYSSSP2004M	SCREW	M2x4

SECTION 4

ELECTRICAL PARTS LIST

SAFETY PRECAUTION:

Parts identified by the $\triangle$ symbol are critical for safety. Replace only with specified parts numbers.
For maximum reliability and performance, all other replacement parts should be identical to those specified.

NOTE:

- Parts not denoted by parts numbers are not supplied by JVC.
- Abbreviations in this list are as follows:

RESISTORS

In the "Description" column:

- All resistance values are in ohms (Ω).
- k expresses kilo-ohm (1 000 ohms, $k\Omega$).
- M expresses mega-ohm (10^6 ohms, $M\Omega$).

In the "Parts Name" column:

- CAR.RESISTOR : Carbon Resistor
- C.M.F.RESISTOR : Constant Metalized Film Resistor
- COMP.RESISTOR: Composition Resistor
- FUSI.RESISTOR : Fusible Resistor
- M.F.RESISTOR : Metal Film Resistor
- M.G.RESISTOR : Metal Graze Resistor
- M.P.RESISTOR : Metal Plate Resistor
- O.M.F.RESISTOR : Oxide Metalized Film Resistor
- TRIM.RESISTOR : Trimerer Resistor
- U.F.RESISTOR : Non-inflammable Resistor
- VAL.RESISTOR : Valiable Resistor
- W.W.RESISTOR : Wire Wound Resistor

CAPACITORS

In the "Description" column:

- All capacitance values are in microfarad (μF) unless otherwise indicated.
- p expresses picofarad (10^{-12} farad, pF).

In the "Parts Name" column:

- CER.CAPACITOR : Ceramic Capacitor
- E.CAPACITOR : Electrolytic Capacitor
- FILM CAPACITOR : Film Capacitor
- M.F.CAPACITOR : Metalized Film Capacitor
- MICA CAPACITOR : Mica Capacitor
- MPP CAPACITOR : Metalized PolyPropylene Capacitor
- MPPS CAPACITOR : Metalized PolyPhenylene Sulfied film Capacitor
- M.M.CAPACITOR : Metalized Mylar Capacitor
- MYLAR CAPACITOR : Mylar Capacitor
- N.P.CAPACITOR : Non-Poler electrolytic Capacitor
- P.P.CAPACITOR : PolyPropylene Capacitor
- PPS CAPACITOR : PolyPhenylene Sulfied film Capacitor
- P.S.CAPACITOR : PolyStyrene Capacitor
- TAN.CAPACITOR : Tantal Capacitor
- TRIM.CAPACITOR : Trimer Capacitor
- VAL.CAPACITOR : Valiable Capacitor

4.1 MAIN BOARD ASSEMBLY PARTS LIST 0 1

CK274500A1

0 1 □ □ □ □ □ □

Symbol No.	Part No.	Part Name	Description
IC1	DS8921M-X	I.C.(M)	NATIONAL SEMICONDUCTOR
IC2	TC7SH08FU-X	I.C.(M)	TOSHIBA
IC3	LMH6654MF-X	I.C.(M)	NATIONAL SEMICONDUCTOR
IC4	TC4W53FU-X	I.C.(M)	TOSHIBA
Q1	2SB1132/QR/-W	TRANSISTOR	ROHM
Q2	DTC124EUA-X	TRANSISTOR	ROHM
Q3	DTC124EUA-X	TRANSISTOR	ROHM
Q4	2SC4626/BC/-X	TRANSISTOR	MATSUSHITA
Q5	DTC144EUA-X	TRANSISTOR	ROHM
Q6	DTC124EUA-X	TRANSISTOR	ROHM
Q7	DTA124EUA-X	TRANSISTOR	ROHM
Q8	DTC124EUA-X	TRANSISTOR	ROHM
Q9	HAT1020R-X	TRANSISTOR	
D1	MA143A-X	DIODE	MATSUSHITA
D2	MA143A-X	DIODE	MATSUSHITA
D3	HZM6C-X	ZENER DIODE	HITACHI
D4	HZM6C-X	ZENER DIODE	HITACHI
D5	HZM9C-X	ZENER DIODE	HITACHI
D6	MA143A-X	DIODE	MATSUSHITA
D7	MA143A-X	DIODE	MATSUSHITA
D8	MA143A-X	DIODE	MATSUSHITA
D9	HZM6C-X	ZENER DIODE	HITACHI
D10	MA143A-X	DIODE	MATSUSHITA
D11	MA143A-X	DIODE	MATSUSHITA
D12	MA143A-X	DIODE	MATSUSHITA
D13	HZM36NB-W	ZENER DIODE	HITACHI
D14	HZM6C-X	ZENER DIODE	HITACHI
D16	NNCD6.2D-X	DIODE	
D17	NNCD6.2D-X	DIODE	
D18	NNCD6.2D-X	DIODE	
D19	NNCD6.2D-X	DIODE	
D20	NNCD6.2D-X	DIODE	
D21	NNCD6.2D-X	DIODE	
D22	NNCD6.2D-X	DIODE	
D23	NNCD6.2D-X	DIODE	
D24	SB140L-6395	DIODE	SANYO
R1	NRSA63J-681X	M.G.RESISTOR	680 1/16W
R2	NRSA63J-153X	M.G.RESISTOR	15k 1/16W
R3	NRSA63J-153X	M.G.RESISTOR	15k 1/16W
R5	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W
R7	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R8	NRSA63J-103X	M.G.RESISTOR	10k 1/16W
R9	NRSA63J-472X	M.G.RESISTOR	4.7k 1/16W
R10	NRSA63J-561X	M.G.RESISTOR	560 1/16W
R11	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R12	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R13	NRSA63J-750X	M.G.RESISTOR	75 1/16W
R14	NRSA63J-471X	M.G.RESISTOR	470 1/16W
R15	NRSA63J-561X	M.G.RESISTOR	560 1/16W
R16	NRSA63J-101X	M.G.RESISTOR	100 1/16W
R18	NRSA63J-472X	M.G.RESISTOR	4.7k 1/16W
R19	NRSA63J-220X	M.G.RESISTOR	22 1/16W
R20	NRSA63J-472X	M.G.RESISTOR	4.7k 1/16W
R21	NRSA63J-103X	M.G.RESISTOR	10k 1/16W
R22	NRSA63J-223X	M.G.RESISTOR	22k 1/16W
R23	NRSA63J-103X	M.G.RESISTOR	10k 1/16W
R24	NRSA63J-101X	M.G.RESISTOR	100 1/16W
R25	NRSA63J-561X	M.G.RESISTOR	560 1/16W
C1	NBE51CM-476X	TAN.CAPACITOR	47 16V
C2	NCB31CK-473X	CER.CAPACITOR	0.047 16V
C3	NCB31CK-473X	CER.CAPACITOR	0.047 16V
C4	NCB31CK-473X	CER.CAPACITOR	0.047 16V
C5	NCB31CK-473X	CER.CAPACITOR	0.047 16V
C6	NBE51CM-476X	TAN.CAPACITOR	47 16V
C7	NCB31CK-473X	CER.CAPACITOR	0.047 16V
C8	QEU1EM-478	E.CAPACITOR	4700 25V
C9	NBE51CM-476X	TAN.CAPACITOR	47 16V
C10	NBE51CM-476X	TAN.CAPACITOR	47 16V

Symbol No.	Part No.	Part Name	Description
C11	NBE51CM-476X	TAN.CAPACITOR	47 16V
CN1	QGA1201C2-02X	CONNECTOR	2PIN
CN3	QGA1201C2-06X	CONNECTOR	6PIN
CN4	QGF1003C2-16W	CONNECTOR	16PIN
CN5	QGA1201C2-08X	CONNECTOR	8PIN
CN6	QGA1201C2-09X	CONNECTOR	9PIN
CN8	QGA3901C1-02	CONNECTOR	2PIN
CN9	QGA1211F2-41X	CONNECTOR	41PIN
CN10	QGA1201C2-07X	CONNECTOR	7PIN
CN11	QGA1201C2-07X	CONNECTOR	7PIN
CN12	QGA1201C2-07X	CONNECTOR	7PIN
K1	NQR0269-004X	FERRITE BEADS	
K2	NQR0269-004X	FERRITE BEADS	
K3	NQR0269-004X	FERRITE BEADS	
K4	NQR0269-004X	FERRITE BEADS	
K5	NQR0269-004X	FERRITE BEADS	
K6	NQR0269-004X	FERRITE BEADS	
K10	NQR0269-004X	FERRITE BEADS	
TB1	NNZ0097-001X	TERMINAL	
TB2	NNZ0097-001X	TERMINAL	
TB3	NNZ0097-001X	TERMINAL	
TB4	NNZ0097-001X	TERMINAL	

4.2 REAR BOARD ASSEMBLY PARTS LIST

02

CK274500A2

02

Symbol No.	Part No.	Part Name	Description	
IC101	NJM4560M-XE	I.C.(M)	JRC	
IC102	NJM2068M-D-XE	I.C.(M)	JRC	
Q101	DTA124EUA-X	TRANSISTOR	ROHM	
D101	MA143A-X	DIODE	MATSUSHITA	
D102	MA143A-X	DIODE	MATSUSHITA	
D103	MA143A-X	DIODE	MATSUSHITA	
LD101	SLB-26VR3F SC43656-105	LED LED SPACER	LD101	
R101	NRSA63J-473X	M.G.RESISTOR	47k	1/16W
R102	NRSA63J-510X	M.G.RESISTOR	51	1/16W
R103	NRSA63J-510X	M.G.RESISTOR	51	1/16W
R104	NRSA63J-104X	M.G.RESISTOR	100k	1/16W
R105	NRSA63J-104X	M.G.RESISTOR	100k	1/16W
R106	NRSA63J-103X	M.G.RESISTOR	10k	1/16W
R107	NRSA63J-103X	M.G.RESISTOR	10k	1/16W
R108	NRSA63J-473X	M.G.RESISTOR	47k	1/16W
R109	NRSA63J-471X	M.G.RESISTOR	470	1/16W
R110	NRSA63J-102X	M.G.RESISTOR	1k	1/16W
R111	NRSA63J-104X	M.G.RESISTOR	100k	1/16W
R112	NRSA63J-472X	M.G.RESISTOR	4.7k	1/16W
R113	NRSA63J-104X	M.G.RESISTOR	100k	1/16W
R114	NRSA63J-392X	M.G.RESISTOR	3.9k	1/16W
R115	NRSA63J-222X	M.G.RESISTOR	2.2k	1/16W
R116	NRSA63J-101X	M.G.RESISTOR	100	1/16W
R117	NRSA63J-101X	M.G.RESISTOR	100	1/16W
R118	NRSA63J-391X	M.G.RESISTOR	390	1/16W
R119	NRSA63J-391X	M.G.RESISTOR	390	1/16W
R120	NRSA63J-391X	M.G.RESISTOR	390	1/16W
R121	NRSA63J-391X	M.G.RESISTOR	390	1/16W
R122	NRSA63J-223X	M.G.RESISTOR	22k	1/16W
VR101	QVQ0310-B14	VAL.RESISTOR	B10k	
C101	NCB41CM-106X	CER.CAPACITOR	10	16V
C102	NCB41CM-106X	CER.CAPACITOR	10	16V
C103	NDC31HJ-102X	CER.CAPACITOR	1000p	50V
C104	NCB41CM-106X	CER.CAPACITOR	10	16V
C105	NCB31CK-473X	CER.CAPACITOR	0.047	16V
C106	NEHM1HM-106X	E.CAPACITOR	10	50V
C107	NBE51EM-106X	TAN.CAPACITOR	10	25V
C108	NBE51CM-476X	TAN.CAPACITOR	47	16V
C109	NBE51CM-476X	TAN.CAPACITOR	47	16V
C110	NEN21CM-106X	N.P.CAPACITOR	10	16V
C111	NEN21CM-106X	N.P.CAPACITOR	10	16V
C112	NDC31HJ-102X	CER.CAPACITOR	1000p	50V
C113	NDC31HJ-102X	CER.CAPACITOR	1000p	50V
S101	QSW0292-004	SLIDE SWITCH		
S102	QSW0292-004	SLIDE SWITCH		
S103	QSW0656-001	PUSH SWITCH		
CN2	QGA1201C2-05X	CONNECTOR	5PIN	
CN6	QGA1201C2-09X	CONNECTOR	9PIN	
K101	NQR0269-004X	FERRITE BEADS		
K102	NQR0269-004X	FERRITE BEADS		
TB101	NNZ0097-001X	TERMINAL		
TB102	NNZ0097-001X	TERMINAL		
TB103	NNZ0097-001X	TERMINAL		
TB104	NNZ0097-001X	TERMINAL		

4.3 26P BOARD ASSEMBLY PARTS LIST

03

CK274500A3

03

Symbol No.	Part No.	Part Name	Description	
D201	HZM36NB-W	ZENER DIODE	HITACHI	
D202	HZM36NB-W	ZENER DIODE	HITACHI	
D203	HZM36NB-W	ZENER DIODE	HITACHI	
D204	HZM36NB-W	ZENER DIODE	HITACHI	
D205	FMB-24L	DIODE		
R201	NRSA63J-750X	M.G.RESISTOR	75	1/16W
R203	NRSA63J-473X	M.G.RESISTOR	47k	1/16W
R204	NRSA63J-473X	M.G.RESISTOR	47k	1/16W
R205	NRSA63J-473X	M.G.RESISTOR	47k	1/16W
R206	NRSA63J-473X	M.G.RESISTOR	47k	1/16W
R207	NRSA63J-473X	M.G.RESISTOR	47k	1/16W
R208	NRSA63J-473X	M.G.RESISTOR	47k	1/16W
CN4	QGF1004F2-16X	CONNECTOR	16PIN	
CN5	QGA1201C2-08X	CONNECTOR	8PIN	
CN8	QGA3901C1-02	CONNECTOR	2PIN	
CN13	QGA3901C1-03	CONNECTOR	3PIN	
AN201	QUB220-08MPXL	C.WIRE ASS'Y		
JK201	QNZ0245-001	CONNECTOR	26PIN	

4.4 BNC BOARD ASSEMBLY PARTS LIST

04

CK274500A4

04

Symbol No.	Part No.	Part Name	Description
CN1	QGA1201C2-02X	CONNECTOR	2PIN
JK301	QNZ0365-001	1P BNC	
K301	NQR0269-004X	FERRITE BEADS	

4.5 SDIST BOARD ASSEMBLY PARTS LIST 0 5

CK2745T0A5 KA-F5602U

CK2745S0A5 KA-F5603U

0 5

Symbol No.	Part No.	Part Name	Description
IC401	LMH6654MF-X	I.C.(M)	NATIONAL SEMICO
IC402	LMH6654MF-X	I.C.(M)	NATIONAL SEMICO
IC403	LMH6654MF-X	I.C.(M)	NATIONAL SEMICO
IC404	LMH6654MF-X	I.C.(M)	NATIONAL SEMICO
IC405	LMH6654MF-X	I.C.(M)	NATIONAL SEMICO
IC406	LMH6654MF-X	I.C.(M)	NATIONAL SEMICO
IC407	BU4094BCFV-X	I.C.(M)	ROHM
IC408	CLC021AVGZ-3.3	I.C.(M)	NA. SEMI F5603U
IC409	TC7SET08FU-X	I.C.(M)	TOSHIBA
IC410	TC7SET08FU-X	I.C.(M)	TOSHIBA
IC411	TC7SET08FU-X	I.C.(M)	TOSHIBA
IC412	TC7SET08FU-X	I.C.(M)	TOSHIBA
IC413	TC7W53F-X	I.C.(M)	TOSHIBA
IC414	TC7W53F-X	I.C.(M)	TOSHIBA
IC416	TC7W53F-X	I.C.(M)	TOSHIBA
IC417	TC7W53F-X	I.C.(M)	TOSHIBA
D401	MA143A-X	DIODE	MATSUSHITA
D402	MA143A-X	DIODE	MATSUSHITA
D403	MA143A-X	DIODE	MATSUSHITA
D405	MA143A-X	DIODE	MATSUSHITA
R401	NRSA63J-750X	M.G.RESISTOR	75 1/16W
R402	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R403	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R404	NRSA63J-752X	M.G.RESISTOR	7.5k 1/16W
R405	NRSA63D-391X	M.G.RESISTOR	390 1/16W
R406	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R407	NRSA63J-221X	M.G.RESISTOR	220 1/16W
R408	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W F5603U
R409	NRSA63D-151X	M.G.RESISTOR	150 1/16W
R410	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R411	NRSA63J-750X	M.G.RESISTOR	75 1/16W
R412	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R413	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R414	NRSA63J-752X	M.G.RESISTOR	7.5k 1/16W
R415	NRSA63D-391X	M.G.RESISTOR	390 1/16W
R416	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R417	NRSA63J-221X	M.G.RESISTOR	220 1/16W
R419	NRSA63J-221X	M.G.RESISTOR	220 1/16W
R420	NRSA63J-752X	M.G.RESISTOR	7.5k 1/16W
R421	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R422	NRSA63J-361X	M.G.RESISTOR	360 1/16W
R423	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R424	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R425	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R426	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R427	NRSA63J-750X	M.G.RESISTOR	75 1/16W
R428	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R429	NRSA63J-162X	M.G.RESISTOR	1.6k 1/16W F5603U
R430	NRSA63J-750X	M.G.RESISTOR	75 1/16W F5603U
R431	NRSA63J-750X	M.G.RESISTOR	75 1/16W F5603U
R432	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W F5603U
R433	NRSA63J-103X	M.G.RESISTOR	10k 1/16W F5603U
R435	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W F5603U
R436	NRSA63J-223X	M.G.RESISTOR	22k 1/16W F5603U
R437	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R438	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R441	NRSA63J-101X	M.G.RESISTOR	100 1/16W F5603U
R442	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W F5603U
R443	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W F5603U
R446	NRSA63D-151X	M.G.RESISTOR	150 1/16W
R447	NRSA63J-102X	M.G.RESISTOR	1k 1/16W
R448	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W F5603U
R449	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R450	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R451	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R452	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R453	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R454	NRSA63J-330X	M.G.RESISTOR	33 1/16W F5603U
R455	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W F5603U
R456	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W F5603U

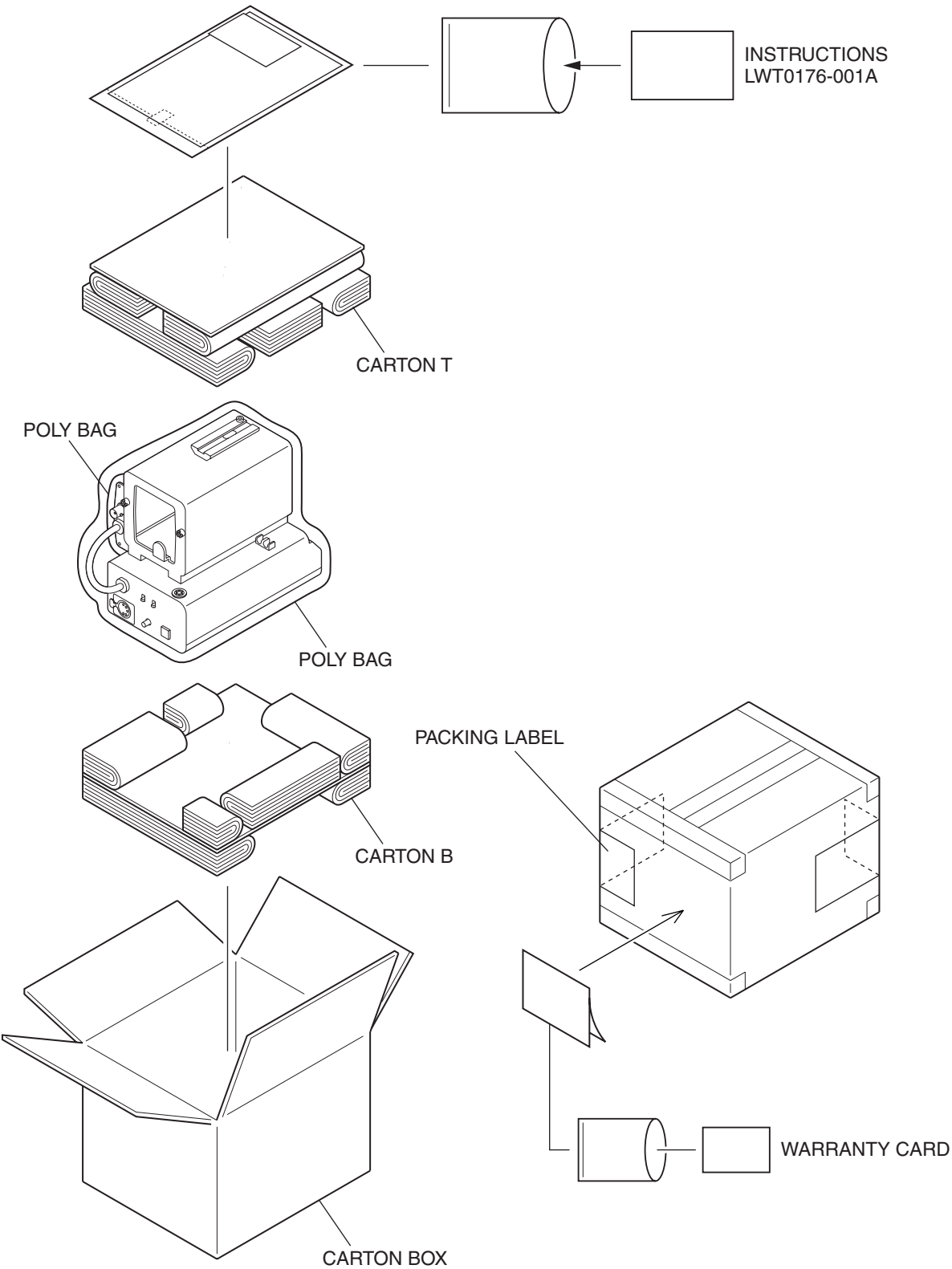
Symbol No.	Part No.	Part Name	Description
R457	NRSA63J-151X	M.G.RESISTOR	150 1/16W F5603U
R458	NRSA63J-334X	M.G.RESISTOR	330k 1/16W F5603U
R459	NRSA63D-123X	M.G.RESISTOR	12k 1/16W
R460	NRSA63D-822X	M.G.RESISTOR	8.2k 1/16W
R461	NRSA63D-563X	M.G.RESISTOR	56k 1/16W
R462	NRSA63J-334X	M.G.RESISTOR	330k 1/16W
R463	NRSA63D-123X	M.G.RESISTOR	12k 1/16W
R464	NRSA63D-822X	M.G.RESISTOR	8.2k 1/16W
R465	NRSA63D-563X	M.G.RESISTOR	56k 1/16W
R466	NRSA63J-124X	M.G.RESISTOR	120k 1/16W
R468	NRSA63J-101X	M.G.RESISTOR	100 1/16W
R469	NRSA63J-223X	M.G.RESISTOR	22k 1/16W
R470	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W
R471	NRSA63J-101X	M.G.RESISTOR	100 1/16W
R472	NRSA63J-223X	M.G.RESISTOR	22k 1/16W
R473	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W
R474	NRSA63J-101X	M.G.RESISTOR	100 1/16W
R475	NRSA63J-223X	M.G.RESISTOR	22k 1/16W
R476	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W
R477	NRSA63J-101X	M.G.RESISTOR	100 1/16W
R478	NRSA63J-223X	M.G.RESISTOR	22k 1/16W
R479	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W
R480	NRSA63J-750X	M.G.RESISTOR	75 1/16W
R481	NRSA63J-750X	M.G.RESISTOR	75 1/16W
R482	NRSA63J-750X	M.G.RESISTOR	75 1/16W
R485	NRSA63D-751X	M.G.RESISTOR	750 1/16W
R487	NRSA63D-101X	M.G.RESISTOR	100 1/16W
R489	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W
R490	NRSA63D-751X	M.G.RESISTOR	750 1/16W
R492	NRSA63D-101X	M.G.RESISTOR	100 1/16W
R494	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W
R495	NRSA63J-0R0X	M.G.RESISTOR	0 1/16W
R496	NRSA63J-223X	M.G.RESISTOR	22k 1/16W
R497	NRSA63J-223X	M.G.RESISTOR	22k 1/16W
R499	NRSA63J-334X	M.G.RESISTOR	330k 1/16W
C401	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C402	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C403	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C404	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C405	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C406	NDC31HJ-100X	CER.CAPACITOR	10p 50V
C407	NDC31HJ-180X	CER.CAPACITOR	18p 50V
C408	NDC31HJ-100X	CER.CAPACITOR	10p 50V
C409	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C410	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C411	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C412	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C413	NCB21AK-105X	CER.CAPACITOR	1 10V
C414	NDC31HJ-100X	CER.CAPACITOR	10p 50V
C415	NDC31HJ-180X	CER.CAPACITOR	18p 50V
C416	NDC31HJ-100X	CER.CAPACITOR	10p 50V
C417	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C418	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C419	NCB41CM-106X	CER.CAPACITOR	10 16V
C420	NBE51CM-476X	TAN.CAPACITOR	47 16V
C421	NBE51CM-476X	TAN.CAPACITOR	47 16V
C422	NBE51CM-476X	TAN.CAPACITOR	47 16V
C423	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C424	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C425	NDC31HJ-100X	CER.CAPACITOR	10p 50V
C426	NDC31HJ-180X	CER.CAPACITOR	18p 50V
C427	NDC31HJ-100X	CER.CAPACITOR	10p 50V
C428	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C429	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C430	NCB41CM-106X	CER.CAPACITOR	10 16V
C431	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C432	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C433	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C434	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C435	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C436	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C437	NCB31CK-104X	CER.CAPACITOR	0.1 16V

[SDIST]

Symbol No.	Part No.	Part Name	Description
C438	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C439	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C441	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C442	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C443	NCB31CK-104X	CER.CAPACITOR	0.1 16V
C444	NCB31CK-104X	CER.CAPACITOR	0.1 16V
L401	NQL024J-150X	COIL	15uH
L402	NQL024J-150X	COIL	15uH
L403	NQL024J-150X	COIL	15uH
L404	NQL024J-150X	COIL	15uH
L405	NQL044K-101X	COIL	100uH
L406	NQL024J-150X	COIL	15uH
L407	NQL024J-150X	COIL	15uH
L408	NQL103J-56NX	COIL	
CN9	QGA1211F2-41X	CONNECTOR	41PIN
CN51	QGB0805K2-80	CONNECTOR	80PIN
K401	NQR0269-004X	FERRITE BEADS	
K402	NQR0269-004X	FERRITE BEADS	
K403	NQR0269-004X	FERRITE BEADS	
K404	NQR0269-004X	FERRITE BEADS	
K405	NQR0269-004X	FERRITE BEADS	
K406	NQR0269-004X	FERRITE BEADS	
K407	NQR0269-004X	FERRITE BEADS	
K408	NQR0269-004X	FERRITE BEADS	
K409	NQR0269-004X	FERRITE BEADS	
K410	NQR0269-004X	FERRITE BEADS	
K411	NQR0269-004X	FERRITE BEADS	
K412	NQR0269-004X	FERRITE BEADS	
K413	NQR0269-004X	FERRITE BEADS	
K421	NQR0351-002X	FERRITE BEADS	
K422	NQR0351-002X	FERRITE BEADS	
K423	NQR0351-002X	FERRITE BEADS	
K424	NQR0351-002X	FERRITE BEADS	
K425	NQR0351-002X	FERRITE BEADS	
K426	NQR0351-002X	FERRITE BEADS	
TB401	NNZ0097-001X	TERMINAL	
TB402	NNZ0097-001X	TERMINAL	

SECTION 5 PACKING

5.1 PACKING ASSEMBLY M 2



Note: Accessories above are subject to change without notice.

JVC[®]

JVC[®] is a registered Trademark owned by Victor Company of Japan, Limited

JVC[®] is a registered Trademark in Japan, the U.S.A., the U.K. and many other countries.



Printed in Japan
(S)